

We claim:

1. A process for the preparation of a porous crystalline silicoaluminophosphate molecular sieve having a chemical composition in terms of the mole ratio of oxides given by the formula $mR: Al_2O_3: nP_2O_5: qSiO_2$ wherein R represents at least one organic templating agent present in the intracrystalline pore system; m represents mole of R present and has a value between 0.02 to 0.3, n has a value of from 0.96 to 1.1 and q has a value of from 0.1 to 1.0 characterized by the x-ray diffraction pattern given in Table I below

Table 1: X-ray diffraction pattern of the silicoaluminophosphate (SAPO-35)

2 θ	d-spacing	Relative intensity
8.60	10.27	13
10.92	8.10	34
13.32	6.64	31
17.30	5.12	64
21.00	4.23	40
21.90	4.06	100
23.22	3.83	26
24.98	3.56	11
26.88	3.31	29
28.50	3.13	49
29.12	3.06	16
31.66	2.82	8
32.16	2.78	71
34.52	2.60	12
42.06	2.15	8
42.84	2.11	8
42.98	2.10	8

which comprises mixing a aluminum source, a silicon source, and phosphorous oxide and an organic template in a non-aqueous medium, heating the mixture, cooling the reaction mixture rapidly to room temperature and separating the crystalline material, washing with distilled water and drying the crystalline material, calcining the crystalline material to remove the organic material occluded in its pore to get porous crystalline silicoanluminophosphate molecular sieve.

2. A process as claimed in claim 1 wherein the silicon source is selected from the group consisting of silica sol, fumed silica, tetramethylorthosilicate, silicic acid and any mixture thereof.
3. A process as claimed in claim 1 wherein the aluminium source is an aluminum alkoxide.
4. A process as claimed in claim 3 wherein the aluminium alkoxide is aluminum isopropoxide.
5. A process as claimed in claim 1 wherein the source of phosphorous oxide is orthophosphoric acid.
6. A process as claimed in claim 1 wherein the organic template is hexamethyleneimine.
7. A process as claimed in claim 1 wherein the heating of the mixture at autogeneous conditions is carried out at a temperature in the range of 190 – 210°C for a period of about 15 days.
8. A process as claimed in claim 1 wherein the washed crystalline material is dried at a temperature in the range of 100 - 120°C.
9. A process as claimed in claim 1 wherein the calcination of the crystalline material is carried out at a temperature in the range of 500-600°C.
10. A process for the preparation of a porous crystalline silicoaluminophosphate molecular sieve having a chemical composition in terms of the mole ration of oxides given by the formula $mR: Al_2O_3: nP_2O_5: qSiO_2$ wherein R represents at least one organic templating agent present in the intracrystalline pore system; m represents mole of R present and has a value between 0.02 to 0.3, n has a value of from 0.96 to 1.1 and q has a value of from 0.1 to 1.0, the molecular sieve having the X-ray diffraction pattern in Table 1 below, the process comprising mixing a source of aluminum, a source of silicon, and a source of phosphorous oxide and an organic temple in a non-aqueous medium, heating the said mixture under autogeneous conditions at 190 – 210°C for about 15 days, cooling the reaction mixture rapidly to room temperature, separating the crystalline material and washing with distilled water and drying the crystalline material, calcining the crystalline material at 500-600 °C to remove the organic material occluded in its pore to get porous crystalline silicoaluminophosphate molecular sieve.
11. A process as claimed in claim 1 wherein the selectivity of the porous crystalline silicoaluminophosphate molecular sieve is in the range of 90 to 100%.